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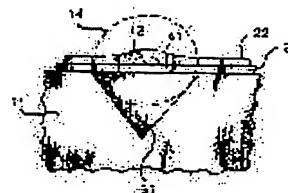
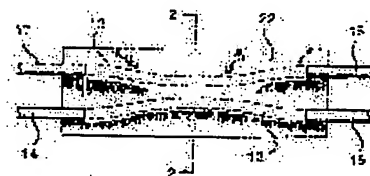
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(54) DEVICE HAVING OPTICAL WAVEGUIDE SUPPORTED BY SUBSTRATE

(57)Abstract:

PURPOSE: To facilitate connection by adopting a structure to cut the lower side of waveguide in the case optical fibers are connected to the waveguide supported to a substrate.

CONSTITUTION: This device is provided with the silicon substrate 11 which is covered by a silica cover layer 22, the waveguides 12, 13 of the thin films which exist under the silica cover layer 22 and the optical fibers 14, 15, 16 and 17 which are aligned to the waveguides 12, 13 arranged in the etched V-grooves of the silicon substrate 11. In such a case, the grooves 31 undercut the waveguide 12 over the distance sufficient to enable the optical butt coupling between the waveguide 12 and the optical fiber 14. The butt coupling renders the physical contact between the waveguide 12 and the optical fiber 14 and a certain distance between the waveguide 12 of the diameter smaller than the diameter of the mode of the optical fiber 14 and the optical fiber 14. As a result, the connection of the optical fibers 14 to 17 is facilitated.



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